

WESTERNPORT — MAN'S IMPACT AND LAND PLANNING

By B. C. S. HARPER*

ABSTRACT: This paper is concerned with estimating the likely long term future land use pattern in the Westernport catchment. Planning policies which will affect this development are discussed and their growth pressures examined. From an analysis of growth forces it appears that significant urban pressure is not likely to occur in the catchment area before the year 2000, but that most of the limited area of land suitable for urban development will be taken up and built upon in the next 50 years. Specialized industrial development associated with port facilities, given it can meet environmental constraints, is likely to proceed at a steady rate, although it will be subject to short period changes related to the world economic picture. Even by the year 2050, however, the area suitable for such industry will be only partly developed. Demand for outdoor recreation facilities associated with water bodies will take up the available space well before the year 2000, since the nature of the physical and policy constraints operating are such that only a very small part of the catchment will serve this purpose. Changes in agriculture can be expected in limited sections of the catchment as a result of intensification to serve urban needs; however, overall the existing pattern will persist. The changing demands of transport also are likely to mean that additional wharfage will be provided and a major airline airport built in the catchment by the year 2000. But the overall pattern of land use in the area will be rural and approximately 90 per cent of the area will remain in low intensity use, predominantly agriculture, in the year 2050.

INTRODUCTION

The Westernport area, after a period of rapid change following European settlement, has become established as a productive agricultural area with a relatively stable pattern of land use. Agriculture and related activities predominate, with intensive urban activity limited to 1.4 per cent of the total area. As our community makes further use of this valuable land, the amount used for urban purposes is likely to increase substantially, with the development of permanent housing and associated facilities, of port facilities and specialized industry, of transport and additional facilities for recreation. However, in comparison with size of the catchment, these changes will be relatively small. The Westernport catchment will continue to be used particularly for agriculture even in the long term future. The topography and transport facilities, the nature of the existing growth pressures, and the relationship of the area to the Melbourne urban complex, will continue to influence development so that such changes as will occur will not significantly alter the rural character.

PLANNING POLICIES AFFECTING THE AREA

Community interest in Westernport as an area valuable for purposes other than agriculture stems from the 1960's. Growth pressures in the Melbourne urban area raising questions of urban strategy, and changes in shipping technology involving Westernport as a deep water harbor, were the two principal factors.

In the 1960's Melbourne was experiencing rapid growth in population with an increased demand for housing due to population growth and the high level of immigration. This growth was rapidly depleting land on the metropolitan fringes zoned for urban development. As a result, the Minister for Local Government requested the Town and Country Planning Board and the Melbourne and Metropolitan Board of Works to examine and report on alternative strategies for Melbourne's development.

These two bodies reported to the Minister in 1967 and both recommended a strategy involving expansion of the urban area in lineal fashion along the principal transportation routes leading

* Director, Westernport Regional Planning Authority, 235 Queen Street, Melbourne, Victoria 3000.

out of the urban areas. Both Boards in their reports recognized the past predominance of growth of the urban complex in east and south-easterly directions, and accepted that this growth pattern was likely to continue. Fig. 1 is a copy of the diagram included in the report prepared by the Town and Country Planning Board which shows the favoured pattern of development. While there are a number of corridors shown, the greatest emphasis is given to that along the Princes Highway and the parallel railway towards the La Trobe Valley; this has become popularly known as the Berwick Corridor.

These reports were considered by the Government and, after public discussion on the proposals, an urban strategy to cater for Melbourne's growth involving expansion along corridors was adopted as Government policy. This policy has been put

into effect by the Melbourne and Metropolitan Board of Works in its planning reports of 1971 and 1974.

Following the adoption of this overall urban strategy by the Government, attention was given to areas where development pressures should be channelled and land conserved. As a result of studies by the Town and Country Planning Board, three statements of Planning Policy, Nos. 2, 3 and 4, were adopted by the Government, covering the Mornington Peninsula, the Dandenong Ranges and the Yarra Valley. These all have the effect of restricting urban growth in their respective areas and limiting the opportunity for urban expansion to the east and south-east of Melbourne. In fact, two of the three corridors shown by the Town and Country Planning Board as possible expansion areas in 1967, that is, those covering the

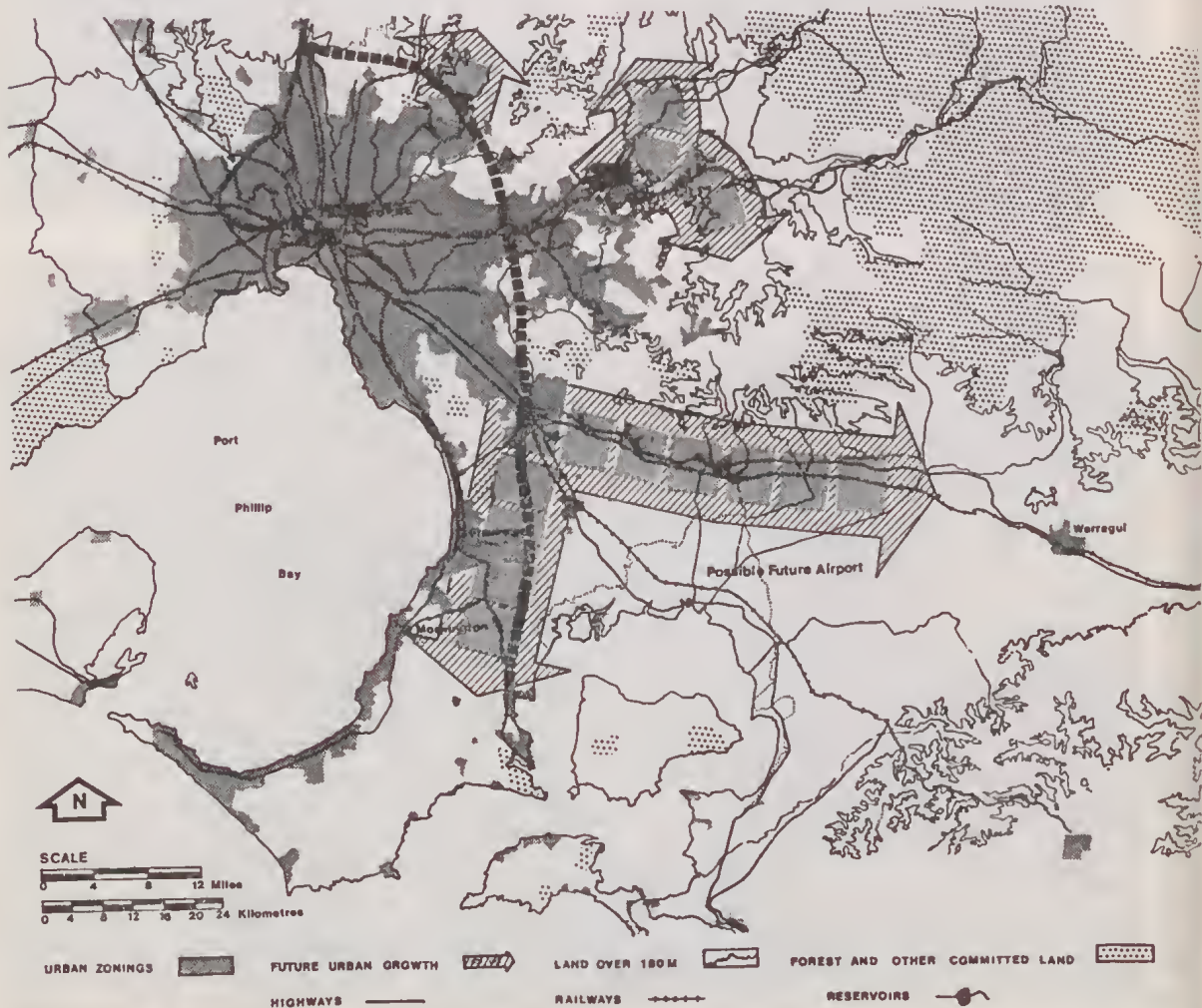


FIG. 1—Map included in Town and Country Planning Board report, Organization for Strategic Planning 1967.

Mornington Peninsula and the Yarra Valley (see Fig. 1) have been truncated, and the bulk of growth which occurs in this direction will have to be accommodated in the Berwick Corridor. This policy of concentrating urban expansion along the Berwick Corridor means that as suitable land in the catchment of Port Phillip Bay is exhausted, Melbourne's urban development will move into the Westernport drainage basin.

The other major Governmental policy affecting the area is Statement of Planning Policy No. 1 (Westernport). This policy arises out of the Government's recognition of the importance to the State of the natural deep and sheltered water in the north arm to accommodate large vessels, and the value of the land adjacent to this channel for industries requiring ready access to wharf facilities. This policy requires the land to be conserved, for normal urban development to be prevented, and only special water-oriented or closely linked industries and port facilities to be provided in the section of the Bay running from Stony Point to Quail Island, where significant industrial development has already occurred.

The development of recreational facilities is influenced by Statement of Planning Policy No. 2 (Mornington Peninsula) and by Government policy on Phillip Island. The prime land for recreation adjacent to the entrance channel at Westernport has already been developed and these policies in effect severely restrict further development.

URBAN DEVELOPMENT PRESSURES

While planning policy can shape development, economic growth brings it about. For the future use of the Westernport catchment it is necessary to make predictions about the future size of the Melbourne Urban Complex. Prediction is difficult: past predictions of population have generally been wrong. In the twenties the Melbourne Town Planning Commission forecast three million people by 1968. In its 1968 report the Melbourne and Metropolitan Board of Works estimated a population of 3.7 million people by 1985 and five million by the year 2000, figures now not likely to be achieved. There are many examples of underestimates. The rapid growth of Melbourne in the late sixties when population increased by 55,000 persons per annum was largely unforeseen. With values changing rapidly, and in a period of economic instability, it is becoming even more difficult than in the past to make forecasts.

In general terms, Melbourne's population growth since the war has been due to migration from overseas, natural increase, and migration from rural areas in the proportions of 50, 40 and

10 per cent respectively. Any of these factors may fluctuate or drastically change over a period of time and the past estimates of future population must be reassessed.

As a result of depressed world economic conditions, the energy crisis and its effects on the Australian economy, it is highly likely that the present national policy of only limited immigration, with a net migration rate of almost zero, will not change for a decade or more. This will mean that one of the prime causes of population growth in Melbourne will be removed. Nevertheless we can expect the re-introduction of controlled immigration in the near future.

Natural increase is just as difficult to assess, with a probable long term downward trend. The 'no-growth' ideas of Dr. Paul Erlich are likely to exert a strong influence in Australia, so that natural increase may fall to a point slightly above zero population growth for some time and then commence to rise slowly.

Large city-small city migration could be stimulated by current initiatives to foster decentralization, or, alternatively, difficult economic conditions possible in the future may work against decentralization.

Thus a reasonable prediction is that the growth of population in the Melbourne area is likely to slow, probably reaching 3.5 million by the year 2000 and 5 million by 2050. How is this population likely to be distributed?

Melbourne has long displayed a tendency to grow towards the south and the east because of more attractive land and climate in these areas, as well as significantly lower costs of providing public utility services. Efforts to encourage relatively higher growth in the west and north have not, and are not likely, to meet with marked success. This bias to the east and south is strong and appears to be continuing.

As Doxiadis, the eminent Greek town planner points out (*Ekistics*, 1968), such a phenomenon is typical of 'dynapolis', the dynamic city. This city he describes as elliptical in shape, with the downtown or city centre located at one focal point in the ellipse and growth strongly oriented towards the side remote from the centre. Melbourne is a typical 'dynapolis'. Between 1954 and 1971 three-quarters of all population growth occurred in the southern and eastern sectors, and this trend is continuing. As land availability in the eastern sector decreases, growth is moving into the southern sector and the Berwick Corridor. Doxiadis states that the forces directing growth in the dynamic city are strong, and must be accepted. Though the pattern may be moulded, it is extremely difficult or well-nigh impossible to

reverse the trend. So although it is now suggested that the growth of Melbourne towards the south and east be discouraged, the social dynamic is likely to make this impossible.

With this growth in these chosen directions the planning policies which close off options for development in the Yarra Valley, the Dandenongs and the Mornington Peninsula have the effect of concentrating growth into the Berwick Corridor. Under the population growth conditions forecast, urban development in this Corridor will be contained within the Port Phillip catchment probably until the year 2000. However, some spill-over into the Westernport catchment is likely to occur at an early date because the Housing Commission proposes to develop approximately 400 ha near Pakenham.

Major urban growth caused by Melbourne's expansion is not likely to occur until the period between the years 2000 and 2050. There are a number of significant constraints affecting the amount of land suitable for urban development in the Corridor where it passes through the Westernport catchment. Limitations are imposed by the flood-prone old swamp area to the south, the steep land to the north and the need to protect areas through which the aquifer under the Kooweerup swamp, so important to agricultural activity, is recharged. Full development is therefore unlikely before 2050. Development will continue in the vicinity of Hastings, but otherwise urban growth in the small towns within the catchment area will not be significant.

INDUSTRIAL ACTIVITY

The development of specialized industry at Westernport is linked with factors affecting migration. The world economy is at present going through a major period of adjustment. We have changes in the trading ties between nations, in currency values, in increasing energy costs (particularly oil), diminution in world food production relative to demand, and the depletion of non-renewable resources. All these contribute to the current world-wide inflation. There is also a re-evaluation of attitudes to consumption and quality life issues, and to work and leisure in the industrialized countries.

Traditionally Australia has been a supplier of basic agricultural products and some extractive raw materials to overseas markets. In more recent times the discovery of new minerals and the establishment of the size of mineral reserves has changed the emphasis of Australian exports from agricultural to extractive industry. Industrial developments serve principally the local market, and have been basically developed in

small scale manufacturing units, requiring tariff protection against overseas competition. However, this process of encouraging local industry has meant that Australia has developed a high level of technological skill which is available to support large scale industrial development in specialized areas when economic conditions are favourable to such expansion.

Australia is particularly well endowed in terms of energy resources at the present time. The significant black and brown coal deposits in the more densely populated areas, together with the oil and gas reserves, are of such magnitude that if these are carefully used Australia can be a low power cost country for many years.

The nation is not so well placed for transport costs. It is isolated from the major world markets, a remoteness of great influence in Australia's history. The recent development of large ships, both bulk carriers and container ships, has resulted in a dramatic decrease in transport costs by sea. This has effectively reduced Australia's remoteness from world markets and opened up new possibilities.

The abundance of raw materials and the favourable power cost situation place Australia in a strategic position to supply semi-processed chemical and metallurgical products to the international market. Australia is also perhaps in a better position to cope with the changing conditions of industry than the more heavily industrialized nations, many of whom are faced with diminishing local basic resources, rapid increases in power costs, and a rapidly diminishing supply of land suitable for the new capital intensive automated plants with access to deep water ports. Their capacity to accommodate the changes in the industrial structure is likely to be limited. This will add to the competitive advantages of Australia.

Thus it appears that conditions are favourable for Australia to change from being a supplier of unprocessed raw materials to being a supplier of semi-processed materials. A shift in emphasis of this kind would give the nation the benefit of the value added before export. Westernport may play a key role in such a change.

Westernport has two great advantages: its port potential which relies on naturally deep and sheltered water to accommodate large ships with ease, and the availability of large areas of undeveloped land suitable for industrial purposes adjacent to and in close proximity with the deep water channel. No other potential deep water port/industrial area in Australia has this combination. Nor do any of them have Westernport's favourable location close to a major city with its support facilities and available work force near

pleasant residential areas. Other advantages are places suitable for a wide range of outdoor recreational activities, and access to the energy and industrial feedstock from the La Trobe Valley and Bass Strait.

The industries suitable to the area would be designed to achieve long-term cost stabilization. They will be very capital intensive, involving a low labour force and high land/area ratio. They are likely to be designed to provide a high quality working environment to attract and hold the staff involved and hence minimize disruptions to production through industrial troubles stemming from worker dissatisfaction. They will aim also to protect the surrounding environment.

The industrial development which has so far occurred has established the basic infrastructure necessary for further development. Typically, the pattern of utilization is as a specialized water-oriented industrial area. Lysaght has developed a cold strip rolling mill (in operation) and a hot strip mill to serve a local market, drawing feed from other plants around the coast, and the Esso/Haematite Gas Fractionation Plant processes local raw materials before export by sea. For such water-oriented industries the area offers great advantages.

Industrial growth rate is difficult to assess, particularly when based on export markets. In 1971 Plant Location International (Aust.) Pty. Ltd. forecast that some 2,500 ha would be acquired and partly built on by industry by 1985. At the present time it is difficult to see such a demand arising: it would appear that something like 3,000 ha may be acquired and partly built upon by the year 2000, given that industry can meet the likely environmental constraints. Beyond that date the future industrial development is difficult to forecast.

RECREATIONAL DEVELOPMENT

Patterns of recreation in our community are at present undergoing significant changes. Outdoor unstructured recreational activities are taking over from previously predominant team games and spectator sport, and generally people are moving to activities which involve 'doing their own thing'. These often involve a degree of exploration, of water and landscape, and part of the experience is a sense of freedom. More and more people are participating in such unstructured activities for longer times and with greater frequency. Driving for pleasure, surfing, camping, canoeing, boating, walking, fossicking, gem collecting, trail bike riding, horse riding, fishing and the like are all on the increase as important weekend recreations. Increasing affluence has also made the second or

weekend house within the reach of many more people, with a consequent major increase in the number of such houses in resort areas.

Areas of greatest appeal for outdoor recreation are those which offer variety in local environments, and people are attracted to environmental boundaries, such as where perhaps land meets water, hill meets plain, or bush meets pasture. It is areas with such characteristics, and particularly waterfront areas, which have seen the greatest development of recreation activities.

The Westernport area with its bay coastline some 260 km in length, with 60 km of sandy beach, and its 692 km² of relatively sheltered water, together with its adjacent hills and wooded areas, has attracted considerable recreational development in the form of holiday home areas, yacht clubs, boating facilities and the like, and is established as an area for day visitors. Already there are holiday villages at the best sites along the coast, particularly on Phillip Island and on the Mornington Peninsula, adjacent to the main entrance channel. Boating facilities have developed at all the physically suitable sites and the future of boating as a recreation is well established.

Yet the fact remains that the opportunity for expansion in recreational facilities in the area to meet the demands of the future community is very limited, due to the physical characteristics of the area. Because of the extensive mud flats, much of the Bay is unsuitable for boating and swimming and there is little potential for the development of new locations for boat launching and mooring and bayside holiday homes. Nearly all the coastline along the northern and eastern sides of the Bay is physically unsuitable for outdoor recreation. Limited additional boating facilities can be provided at Hastings in the Warneet to Tooradin areas, and at Corinella. Other areas have little potential. In addition all the areas physically suitable for holiday housing have been developed and in fact so have others which should not have been subdivided for this purpose. As a result, pressure for additional development will be greatest in the areas with the best characteristics, that is, adjacent to the entrance channel on the Peninsula and on Phillip Island. In both these areas, however, Government has laid down strong planning policies which will restrict development.

There is generally a consensus that the coastal area of the Peninsula from Somers to Flinders should not be allowed to develop in a fashion similar to the Port Phillip coast. In the implementation of Statement of Planning Policy No. 2, it appears that conservation of the landscape will exercise a major restraint on the size of these coastal towns in the future. Similarly, on Phillip

Island the Government's concern that the wildlife protection and the scenic character of the island be preserved from urbanization means that further recreational development will largely be constrained to around Cowes.

In view of these policies and the general lack of suitable locations around the Bay for new recreational villages, it can be expected that the character of the existing recreational villages will change over time with the changes in patterns of recreation. The recreational areas are likely to have to cope with more day visitors and there may be a gradual swing away from second homes to flats and holiday accommodations in these villages. Overall, the area occupied by such villages will not increase substantially and will remain a very small proportion of Westernport catchment.

Boats operating from the established areas around the entrance channel and the north arm will most certainly increase, but this will not be accompanied by substantial physical changes to the area. Similarly, other non-water oriented recreations such as riding, bushwalking, driving for pleasure, etc., based on the other natural features of the catchment, will have greatly increased participation, but, as with the increased boating activity, they will not bring major changes in the character of the catchment.

AGRICULTURE

Agriculture is the predominant land use in the Westernport catchment and this will continue well beyond the year 2050. Changes are taking place in agriculture as in all other fields, but it appears that none of these will exert a significant influence on the conditions in the catchment area.

Dairy and grazing are the predominant land uses, both capable of intensification to lot type feeding. However, this is unlikely to happen because of the general high quality of the pasture and the remoteness from suitable grain production areas and consequent increase in the cost of feed.

Poultry farming and pig farming, two intensive feed lot types of husbandry, are well established in the catchment. These will increase as urban expansion forces them out of the Port Phillip catchment and because of the locational and climatic advantages Westernport possesses. However, they will not form significant numbers or cover major areas.

Market gardening has been increasing in the area in recent years, with production for both the fresh vegetable market and contracts for canneries and food processors. The major area of vegetable growing around Dalmore in the heart of the old Kooweerup swamp is related to this latter market,

while market gardening is fairly widely distributed. Available water is limiting production in both activities. The proximity of the Melbourne market will ensure that market gardening continues and expands, although it will never challenge the dominance of other agricultural uses.

TRANSPORT

Two significant developments in transport are likely: the future development of port facilities and the possible construction of a second airport. Port developments are discussed in another paper and little need be said here except that their associated land requirements will not be extensive. An airline airport on the other hand, built on modern standards, involves an area of almost 8,000 ha.

As with many of the factors associated with Westernport, it is difficult to say whether or not such an airport will be required or will be built in the area. There are many uncertainties. However, it must be recognized that the Westernport plain of the old Kooweerup swamp represents the only location around Melbourne conveniently placed in the areas of origin of the bulk of airline users which is topographically suitable for an airport, and in which the airspace is not already pre-empted. Unless there are significant changes in travel patterns or transport technology it is highly likely that such an airport will be built by the year 2000. A number of sites have been investigated and two exist where an airport may be provided with minimum disruption to the overall pattern of development and use. Because of the physical features of these sites, each being in an extensive area of flood-prone land, the pattern of urbanization discussed previously is not likely to be modified in form by the provision of an airport. The pattern or corridor development will persist, with development somewhat accelerated as a result of the economic impact of the airport.

CONCLUSION

In looking forward towards man's likely future impact on the Westernport area, it is valuable also to reflect on the past. In the early days of European settlement in the catchment, massive changes were wrought in the environment. Indeed, the clearing of the timber and the drainage of the Kooweerup swamp brought about far greater changes than anything that is likely to happen in the area in the future. It is difficult for the people of today to appreciate the magnitude of these past changes, though some idea can be obtained from early reports. For example, a journalist who, last century, travelled on the

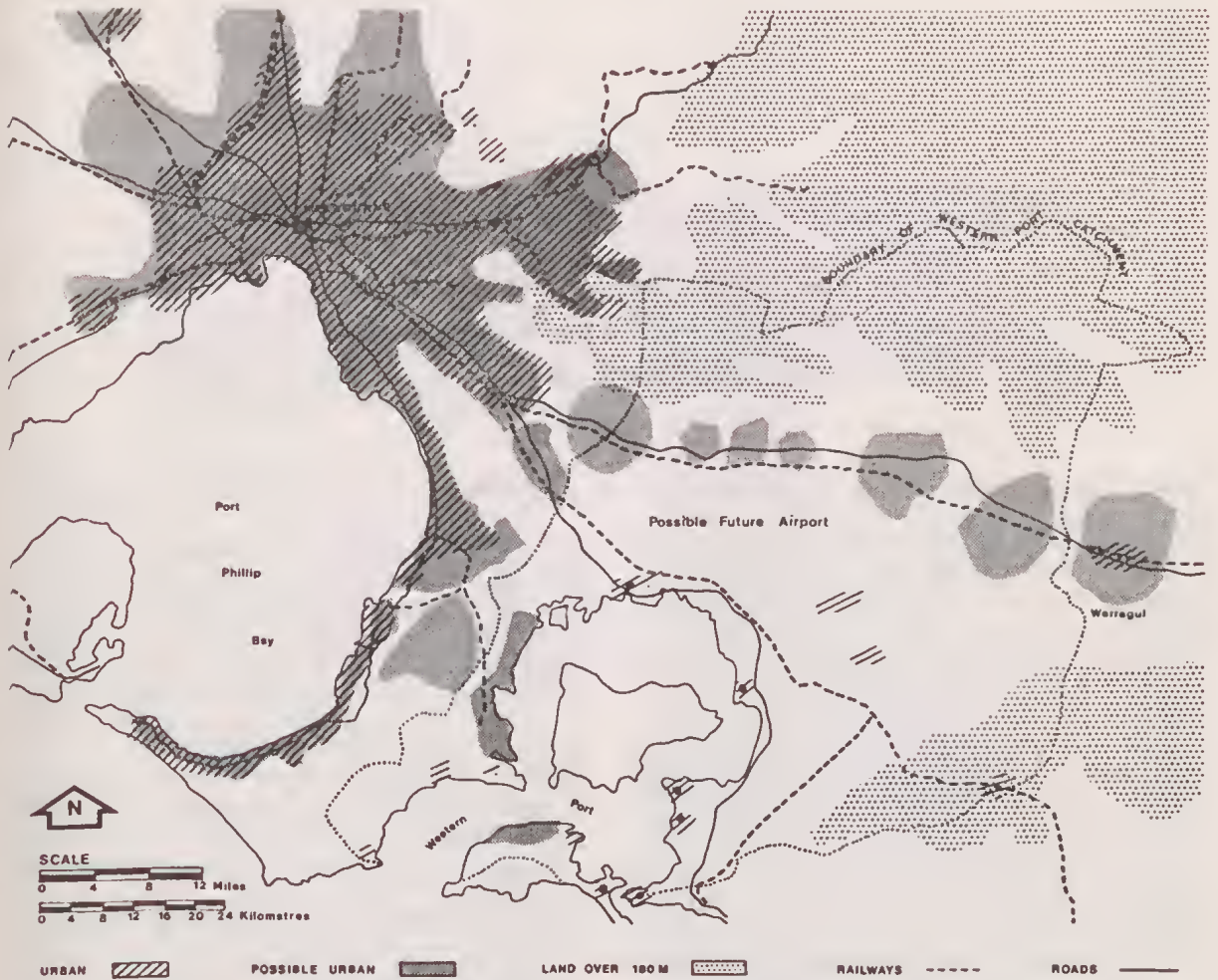


FIG. 2—Likely long-term future urban development pattern in the Westernport catchment.

Great Southern Railway writes about the experience of crossing the Kooweerup swamp, which we now know as an interesting area of productive farmland, ‘. . . careering over the Koo Wee Rup, which had the appearance of an inland sea, water lay deep on either hand and spread far over the land, with here and there bilious tea-tree clumps imparting to the seascape an uninviting prospect’ (Quoted in Bowden 1970). A far cry from the present-day conditions! Again, decrease in rainfall and increased run-off resulted from forest clearance as land was opened up for grazing and for building towns and establishing transport facilities to ship produce to outside markets. These events caused environmental changes of such significance that by comparison possible future change is insignificant. For the pattern of land use set in the early period of settlement will persist well into the future, with agriculture predominant, and

even in the year 2050 approximately 90 per cent of the catchment will still be rural. Fig. 2 shows in diagrammatic fashion the likely pattern of urban development in the year 2050 and indicates the small proportion of the catchment involved. The relatively long period of land use for rural purposes gives the community time to plan, design, finance and construct works to protect the environment of Westernport Bay. It would appear that the pattern of development discussed can be accommodated without difficulty.

REFERENCES

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